Oregon Agricultural College and Experiment Station

CIRCULAR BULLETIN NO. 5

Thousand Headed Kale

Thousand leaved kale is highly valuable as a green feed for cows, hogs, sheep or poultry thru the winter from October to the middle of April. The better types of the plant endure the ordinary Western Oregon winter weather without injury, yielding, under favorable conditions, from 30 to 40 tons per acre of succulent and nutritious green feed. Kale may also be grown for summer green feed both in Western and Eastern Oregon, yielding from 15 to 25 tons per acre at this season.

SOIL

A deep, well drained, rich loam soil is best for this crop hence the ordinary valley silt loam soil, if well drained, thoroly tilled, and heavily manured, will produce excellent yields. A long, narrow, slightly sloping field running alongside a piece of sod ground, or a wide sodded fence row, or one of the farm lanes, is preferable, as the hauling may then be done on the firmer ground during the wet winter weather. The kale should not be planted on the sod ground itself however, as this often leads either to injury from cutworms or from the drying out of the soil where the sod is not thoroly broken down.

The kale ground should be heavily manured and deeply plowed in the fall if possible, and replowed once early in the spring and again before transplanting. If fall plowing cannot be done, manuring during winter and spring and deep early spring plowing, repeated twice at lesser depths before transplanting, will put the ground in good shape. Following the second plowing the ground should be kept clean of weeds and thoroly mulched to conserve moisture by frequent light harrowings until transplanting time.

SEEDING

For transplanting, the seed should be sown in drill rows about three feet apart, as early in March as it is possible to get on the ground. If possible a strip of the best drained ground on the farm should be used for growing the young plants, and this should be

manured and plowed in the fall so that it need only be replowed and worked down at once for seeding in the spring, thus getting the plants started as early as possible. On sandy loams the seeding need not be done so early, unless very early fall feed is desired. One pound of seed will furnish more than enough plants for an acre.

TRANSPLANTING

Transplanting should be done during June if possible, when the plants are from 6 to 12 inches high. Generally the larger sized plants recover more quickly after transplanting. Transplanting done later than June is liable to be held back by the dry weather so much as not to be ready for cutting in October. With the ground in fine tilth, and the rows marked off, transplanting of small acreages can be done rapidly by hand with a long bladed spade. The spade is forced deeply into the soil, pushed to one side thus opening a deep, narrow slot in which the kale root is placed, the spade then being pulled out and the mellow soil permitted to close round the plant. Care should be taken not to injure the roots when taking them up from the drill row and replacing them in the new ground. A wet gunny sack may be thrown over the roots to prevent their drying out after being taken up. The leaves need not be stripped for transplanting. The plants should be placed three feet apart each way, covered four or five inches deeper than in the drill row, the soil firmed around them with the foot and later when wilted down, the whole field may be rolled. Where the soil is very dry it has been found decidedly beneficial to haul a barrel of water along the row on a sled and give each plant a few quarts after it is set. Plants should be left every three feet in the original drill rows and all extra plants saved for replacing those that may not survive transplanting.

Transplanting of large acreages may be done by plowing and placing the plants three feet apart in every third furrow, covering the roots and lower part of the stem with the next furrow turned, and following the day's work with a roller. Missing plants may be replaced later by hand. On large fields a regular transplanting machine may also be used. For the most successful use of such a machine, a steady, slow walking team, and a good driver are required and considerable practice in placing the plants will be needed before it can be done accurately.

Instead of transplanting the seed may be dropped in hills, three

feet apart each way, as early as the ground can be prepared. Later each hill should be thinned, leaving one vigorous plant. As a rule this method does not give as good yields as transplanting.

After transplanting or thinning, the field should receive frequent shallow cultivations to destroy weeds and conserve moisture until the plants branch out so far as to prevent further tillage. A six-shovel riding cultivator is an excellent machine for this purpose.

FEEDING

In October or November after the green corn has been fed out, the kale, altho not fully grown, will be ready for feeding. The plants should be cut off at the ground, tossed onto the wagon or sled and hauled to the feeding place. Enough may be cut at one time for one or several days' feeding. Frozen kale should be allowed to thaw out before feeding. Where it is thought that the older plants, late in spring, may taint the milk this can be avoided by feeding immediately after milking. Thirty-five pounds of kale per day with twenty pounds of good hay, such as vetch and oats, clover, or alfalfa, fed in two portions, makes an excellent ration for milch cows, very little mill feed being needed. The kale may be fed clear thru the winter until April or later, when the early fall-sown rye and vetch may take its place as green feed. To all classes of stock the kale is fed just as it comes from the field without chopping. Fed to hogs thru the winter it proves excellent in keeping up the growing stock and with grain added makes a first-class fattening ration. Kale fed in small amounts to sheep that have no winter pasture, has a marked effect in improving their condition. As winter feed for poultry, the kale is unexcelled in maintaining egg production, and improving the quality of the egg and the health of the chickens.

SUMMER KALE

For summer feeding kale seed may be fall-sown and transplanted early in the spring, being ready under favorable conditions for cutting during July, August, and September. Unless the ground be irrigated, however, the yields are not so heavy at this season. Where early frosts destroy the young fall-sown plants, a small cold-frame with well prepared soil may be thickly seeded in late winter or early spring and early transplants for summer kale obtained in this way.

In Eastern Oregon the winter weather is too cold to permit the

growing of winter kale. By starting the plants in a cold-frame summer kale may be successfully produced—especially wherever it can be irrigated.

Feeding this plant by stripping off the lower leaves is not recommended as a regular practice as it is extremely laborious, especially during wet weather, puddles the soil badly and causes the stripped plants to suffer from frost. However, where the green feed runs short in September the larger lower leaves of the kale may be stripped off for feeding at this time. Later as wet weather comes on and the plant grows larger, it pays to abandon stripping and cut the entire plant.

SEED SELECTION

As well bred seed cannot as yet be secured upon the market it is important that the grower should select five or ten of the very best plants and let them go to seed. From twenty to fifty different types of kale plants have been grown from one packet of commercial seed. Some of these types are excellent in quality and yield but the majority are of little value. To get good seed the grower must select a good parent plant; those of good size, weighing from forty to fifty pounds each, with medium sized, smooth, green leaves, the main stem branching out close to the ground into innumerable stems and leaves in all stages of growth. Only plants which go thru the heaviest frost without injury, should be selected. These plants will go to seed the following summer. They are best left in one end of the field where they will be out of the way and where they will not be cross pollenated by inferior kale plants or by wild turnip, rape, mustard and similar closely related plants. These seed plants should be harvested when the stems have dried out and the pods are ready to open. They may be threshed by hand over canvas. One good plant will yield sufficient seed for about an acre of kale plants.

For several years the Experiment Station has been carrying on breeding trials with this plant which it is believed, from results already obtained, will lead to the production of improved strains. A report of success or failure in growing kale, with a description of the conditions, would be greatly appreciated by this Station.

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